

Science Update

Peanut Turns Out Finished Beef

Rhizoma peanut is a popular forage for cow-calf producers on the Gulf Coast. A new ARS study shows an additional benefit: Cattle may gain enough weight from rhizoma peanut to go directly from pasture to slaughter without the usual cost-adding stint in the feedlot. Fat color and off-flavor problems often linked with forage-finishing apparently don't occur when steers eat rhizoma peanut. However, producers interested in rhizoma peanut may want to choose a cattle breed with greater genetic potential for tender meat. That's because the scientists found that meat from animals fed only on rhizoma peanut may be slightly darker colored and less tender than meat from steers fattened on grain-based feed. *Andrew C. Hammond, USDA-ARS Subtropical Agricultural Research Station, Brooksville, Florida, phone (904) 796-3385.*

Fruit Flies May Hide—But May Not Arrive Alive

Can tropical fruit flies hitchhiking in sealed shipments of fresh produce be doomed by an altered mix of oxygen, nitrogen, and carbon dioxide coupled with controlled temperatures? ARS scientists in Texas will investigate this novel pest control approach. It may provide an alternative to some uses of methyl bromide, a chemical pesticide. Tests have begun under a 3-year cooperative research and development agreement (CRADA) between ARS and TransFRESH Corp. of Salinas, California. The goal is to perfect in-transit treatments to protect citrus, mango, avocado, and other fresh fruit from pests such as Mediterranean, Mexican, Caribbean, and other fruit flies. Keeping shipped U.S. produce free of the pests is essential to maintain and expand markets here and elsewhere, such as in Pacific Rim countries. Approved treatments face a tall order: They must kill 99.9968 percent

of the pests. Methyl bromide, the principal postharvest fumigant, is scheduled for removal due to environmental concerns. Current quarantine treatments can also interrupt marketing, when they must be done before shipping. That is true for many fumigants and for nonchemical treatments such as lethal hot or cold temperatures. Scientists aim to develop new technology for use during the typical 1- to 3-week shipping period for produce. Studies will focus first on treating grapefruit for infestations of Mexican fruit fly. *Robert Mangan, USDA-ARS Crop Quality and Fruit Insects Research Unit, Weslaco, Texas, phone (210) 565-2647.*

DOUG WILSON



Immature corn ears. (K7188-1)

Silky Weapon Against Worms

Cornsilk may hold a key to cutting insecticide spray on sweet corn by up to 85 percent. ARS scientists discovered that certain lines of field corn—the type that yields large, rough kernels normally used for animal feed—resist the corn earworm. The cornsilk of these lines makes natural compounds that discourage the worms, which normally would crawl

through the silk and then burrow into the ears to munch corn kernels. This pest costs U.S. growers—who may spray insecticide 25 to 40 times—more than \$100 million annually. Now, under a CRADA, ARS scientists will use plant breeding techniques to transfer pest resistance in the field corn to sweet corn lines developed by the Rogers Seed Co. of Nampa, Idaho. *Neil Widstrom, USDA-ARS Insect Biology and Population Management Research Laboratory, Tifton, Georgia; phone (912) 387-2341.*

Could Beans Clean Up After Pigs?

Green tools for preventing water pollution may come from a study beginning this spring in North Carolina. ARS and North Carolina State University scientists will examine the capacity of soybean plants—including one very unusual variety—to cleanse soil of nitrogen from swine waste. Many farmers recycle this waste as a cost-free natural crop fertilizer. In some areas, however, more waste is produced than crops can use, and the excess nitrogen has potential to pollute surface and groundwater. The researchers believe soybean plants may outperform other crops in removing excess soil nitrogen. Compared to corn, for example, a soybean plant turns relatively more nitrogen into high-protein seeds removed at harvest. And relatively less nitrogen winds up in unharvested husks and stems whose decay returns it to the soil. One soybean variety in the test has a deficiency that may make it even better at removing excess soil nitrogen. It lacks root growths, or nodules that enable other soybeans to use gaseous nitrogen present in air. But this variety must draw all its nitrogen from soil—where swine waste can supply it aplenty. *Dan Israel, USDA-ARS Soybean and Nitrogen Fixation Research Unit, Raleigh, North Carolina, phone (919) 515-2388.*